

1 **CLAIMS**

2 1. One or more computer-readable media having stored thereon a
3 computer program that, when executed by one or more processors of a computing
4 device, causes the one or more processors to perform acts including:

5 transmitting a request for an enrollment certificate for a virtual private
6 network to a registration authority operating independently of a certificate
7 authority.

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9 2. One or more computer-readable media as recited in claim 1, wherein
10 the computer program further causes the one or more processors to transmit
11 additional requests regarding maintaining enrollment in the virtual private network
12 to the registration authority.

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14 3. One or more computer-readable media as recited in claim 1, wherein
15 the computing device comprises a router.

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17 4. A method implemented at a registration authority, the method
18 comprising:

19 receiving, from a device, a get certificate authority certificate request;
20 generating a response including a certificate of the registration authority;
21 and
22 returning the response to the device.

1 5. A method as recited in claim 4, wherein the device comprises a
2 router.

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4 6. A method as recited in claim 4, wherein the get certificate authority
5 certificate request identifies a dynamically linked library (DLL) that is the
6 registration authority.

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8 7. A method as recited in claim 4, wherein the response comprises a
9 degenerated message.

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11 8. A method as recited in claim 4, wherein the response includes both a
12 signing certificate of the registration authority and an encryption certificate of the
13 registration authority.

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15 9. A method as recited in claim 4, wherein the response further includes
16 a certificate chain of the certificate authority.

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18 10. One or more computer-readable media having stored thereon a
19 plurality of instructions that, when executed by one or more processors at a
20 registration authority, causes the one or more processors to perform acts including:
21 receiving, from a device, a get certificate authority certificate request;
22 generating a response including a certificate of the registration authority;
23 and
24 returning the response to the device.

1 **11.** One or more computer-readable media as recited in claim 10,
2 wherein the device comprises a router.

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4 **12.** One or more computer-readable media as recited in claim 10,
5 wherein the get certificate authority certificate request identifies a dynamically
6 linked library (DLL) that is the registration authority.

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8 **13.** One or more computer-readable media as recited in claim 10,
9 wherein the response comprises a degenerated message.

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11 **14.** One or more computer-readable media as recited in claim 10,
12 wherein the response includes both a signing certificate of the registration
13 authority and an encryption certificate of the registration authority.

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15 **15.** One or more computer-readable media as recited in claim 10,
16 wherein the response further includes a certificate chain of the certificate
17 authority.